present in milk and cream as sold. But few serious attempts have been made to differentiate between and to determine the functions of what may be called the normal bacteria of milk, that is to say, those which, under the best possible precautions against extraneous contamination, are invariably present in it by the time it reaches the market. C. Guenther and H. Thierfelder, however, in the *Arch. f. Hygiene*, xxv., come to the conclusion that the "spontaneous" coagulation and lactic fermentation are the work of one particular species which, absent from fresh drawn, is always abundant in curdled milk. It is described by them as 1 μ in length and a half μ in thickness, stationary, not bearing spores, stained by Gram's method, growing best in a solution containing both sugar and albumin, at a temperature of 28° C., and with or without access of air; it does not liquefy gelatin or evolve gases, grows badly on potato, and forms on the surface of agar a film like fine dew. A. Luebert, *Zeitsch. f. Hyg.*, describes a spontaneous peptonization which milk occasionally undergoes, rendering it highly deleterious to infants, though drunk with impunity by adults. The agent in this change is the *bac. i.* of Flügge, a short, thick, very mobile organism, having no action on sugar or fat, but liquefying serum gelatin and peptonizing albumins to the extent of 93 per cent. in twenty-four hours. The poison is not in the caseoses or peptones formed, but in the bodies of the bacilli themselves. Abstracts of both papers may be seen in the *Hyg. Rundschau*, vi., pages 506 and 851, respectively.

Milk Preservatives.—Salicylic acid, carbonate of soda, and borax are the chief ingredients of the preservatives so much used by the small retail dealers who do not, like the larger firms, put their surplus milk at the close of each day through a separator, converting it into butter, but carry it over to the next to be mixed with the fresh milk or to be sold to their less fastidious and poorer customers. Salicylic acid or salicylate of soda is easily detected by the color it gives with ferric chloride, but for soda and borax, P. Solomon, *Hyg. Rundschau*, vi., 506, recommends the method of Tscherbakoff as the best preliminary test. It consists in the addition of 10 c.cms. of the milk to the same volume of alcohol of the strength of 95 per cent., when it will coagulate in large clots unless soda or borax be present. Even as little as 0.06 per cent. of soda, though it does not prevent, delays coagulation for five minutes, and the clots which then fall are small and quite unlike those produced by the alcohol in pure milk. Of course, a positive result should be verified by more exact analysis before legal proceedings are taken. Formalin, however, is fast coming to the front, and for it other tests must be found.

Toxicity of Sweat—Ochlosis.—Arloing belongs to the "old school," who, despite the *negative* results obtained by analysis, adhere to the beliefs that excess of CO_2 and deficiency of O_2 in the expired air are not sufficient to explain the phenomena of *ochlotic* poisoning, differing as they do from those following descent into wells, vaults, or vats in which CO_2 has accumulated, and from those of "mountain sickness" and of balloon ascents, where O_2 alone is deficient, and that the presence in the breath and probably still more in the exhalations from the body of some organic poison, perhaps capable of baffling the resources of chemists for many years to come, must be assumed to account for the symptoms and phenomena in question, and has shown that the sweat, at any rate, possesses a high degree of toxicity.

Having steeped in distilled water the vest of a man who had been dancing throughout a long evening, he injected the liquid into several dogs. They became drowsy, were taken with violent diarrhœa, and died in a few hours. The autopsies showed congestion of the entire alimentary canal, yellow patches on the liver surface, whitish clots occupying the cavity of the heart, and the auriculo-ventricular valves patent. The symptoms induced in rabbits by the sweat from the same person's drawers, or lower limbs, were different—viz., excitement, erethism, clonic spasms, followed by paralytic phenomena and death. There is no question here of O_2 and CO_2, nor are the symptoms, especially as exhibited in the rabbits, those of common septicæmia or sapræmia, nor, again, would such small doses of kreatin appear adequate; and one is driven to the conclusion that toxic products of the waste of the tissues are eliminated by the skin and possibly by the lungs also; at any rate the former source cannot be denied, and until the chemists have demonstrated the cutaneous it ill becomes them to deny the pulmonary poison.

[Personally, however, I am quite prepared to renounce the latter, believing that the former is the chief factor in ochlotic poisoning, the milder forms of which are felt inversely as the cleanliness of the crowd, being more painfully felt by the susceptible person, like myself, after some hours passed in a law court, especially the police and county courts, a primary school, or a theatre, than in a church, concert, or private reception-room, however crowded. Where there is a stench there must be something more than an excess of inodorous CO_2, and, however interesting to the physiologist, it matters not to the practical sanitarian (save as an argument in favor of public baths) whether the immediate cause of ochlotism be exhaled from the pulmonary or the cutaneous surfaces, not to mention the buccal cavity and interstices between the teeth. Indeed, I believe that "o'clo's" play an important part in the production of "ochlosis."—E. F. W.]

But these crude observations of M. Arloing promise, if verified, to open up wide fields for pathological research. His dancer was presumably in the enjoyment of good health; but we must have biological and chemical examinations of the sweat in rheumatic fever, in acute gout, nephritis, etc., following chills, in scarlatina, etc., and in habitual malassimilation of food, habitual urinary deposits, etc. What light might not be thrown on the consequences of chills in apparently inducing, and certainly in aggravating and complicating, a large number of febrile pathological states, as well as on the relation between eruptions and defective or excessive cutaneous secretions, and the elimination of drugs or the poisons of disease.

"Natural" Treatment of Sewage.—An interesting experiment is being carried out at Exeter, a city of 40,000 inhabitants. The engineer, Mr. Donald Cameron, being called on to purify the sewage before discharging it into the river, refused to use any chemicals which would have the effect of destroying along with the bacteria of putrefaction those in whose function of resolving all organic matter into its ultimate components, CO_2, NH_3, and H_2O, rests the entire process of self-purification of water, as well as of the treatment of sewage by irrigation, and the theory of manures.